

# Wind Powering\* Rural Electric Cooperatives

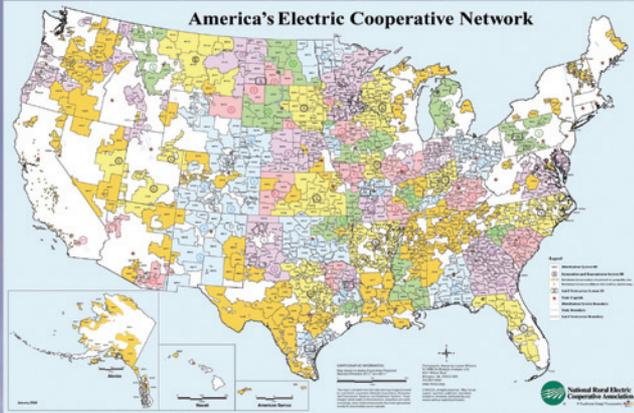
\* utility-scale



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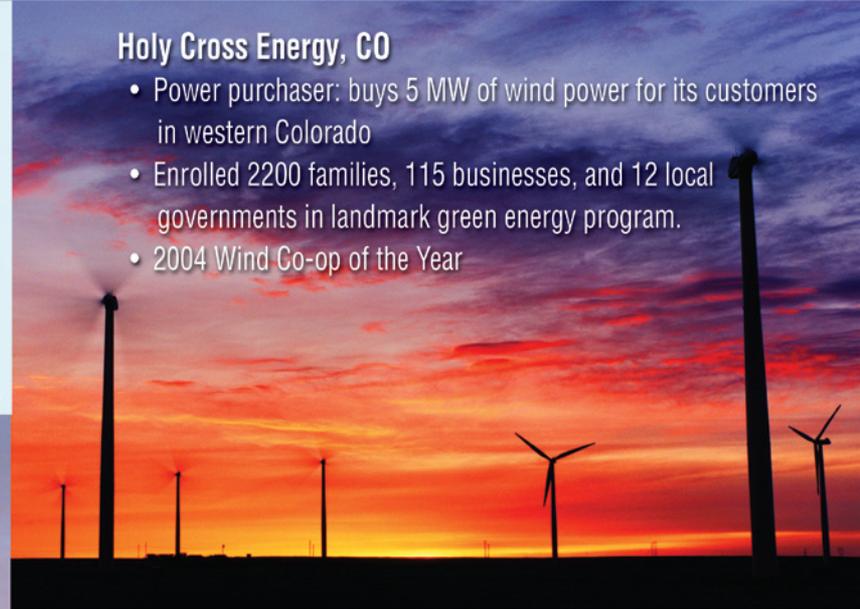
## G&T's can own, purchase, or wheel wind generation

- Tri-State G&T Association, CO
- Basin Electric Power Cooperative, ND
- East River Electric Cooperative, SD
- Great River Energy, MN
- Corn Belt Power Cooperative, IA
- Sunflower Electric Power Corporation, KS
- Nebraska Electric, NE
- Dairyland Power Cooperative, WI
- Western Farmers Electric Cooperative, OK
- Minnkota Power Cooperative, ND



## Holy Cross Energy, CO

- Power purchaser: buys 5 MW of wind power for its customers in western Colorado
- Enrolled 2200 families, 115 businesses, and 12 local governments in landmark green energy program.
- 2004 Wind Co-op of the Year



## Alaska Village Electric Co-op, AK

- Owner
- Capacity: .264 MW
- Online 2002.

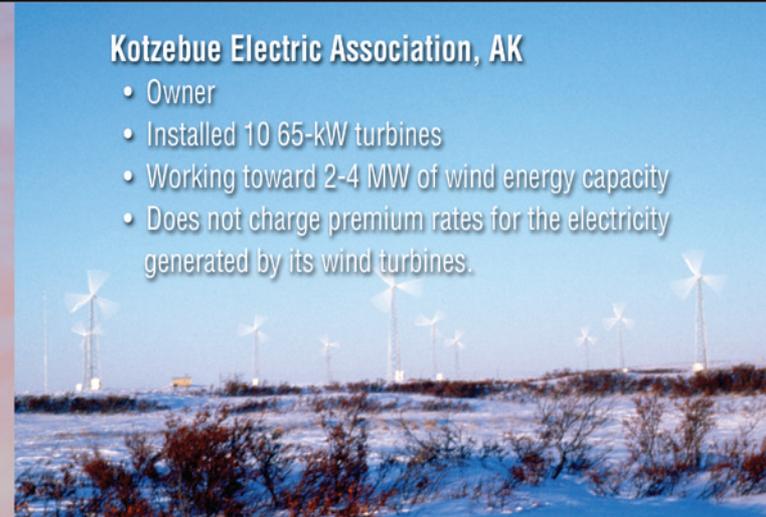


## Opportunities

- Utility-scale wind installations can provide local economic benefits to the community.
- Small-scale local projects can be sized to meet local needs and constraints.
- Small-scale local projects have minimal distribution/transmission influence on the regional grid.
- Local projects minimize transmission/distribution losses and wheeling costs.
- Available USDA/RUS financing presents a low-cost funding option.
- Renewable energy development responds to the interests of many customers.
- Wind energy is a price stable, competitive, local, clean, inexhaustible, secure energy resource.

## Kotzebue Electric Association, AK

- Owner
- Installed 10 65-kW turbines
- Working toward 2-4 MW of wind energy capacity
- Does not charge premium rates for the electricity generated by its wind turbines.



## East River Electric Power Cooperative, SD

- Owner
- Installed two 1.3-MW wind turbines
- Used capital provided by USDA Rural Utility Service, a federal lending agency
- Power purchased by Western Electric Farmers' Co-op.

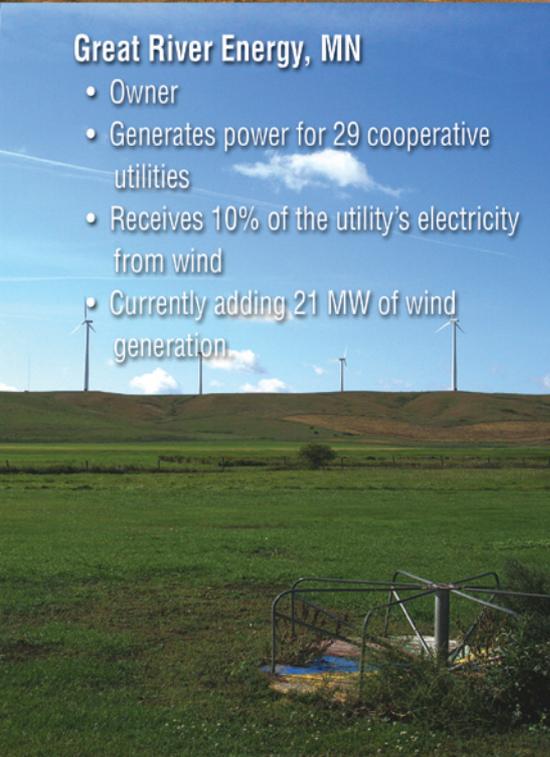


## Challenges

- Distribution co-ops need to reconcile the addition of wind generation with long term, all-source requirements contracts.
- Small-scale local projects can be more expensive than avoided local electric cost.
- Large-scale wind projects can require new transmission construction.
- Co-ops' principal experience is with traditional energy resources (coal, gas, and hydro); direct experience with wind energy is limited.
- Co-ops generally lack current information on wind energy technology, economics, operations, and engineering requirements.
- Most rural co-ops have small, busy staffs with limited time for new ventures.
- There is no generally accepted interconnection standard for wind systems.

## Great River Energy, MN

- Owner
- Generates power for 29 cooperative utilities
- Receives 10% of the utility's electricity from wind
- Currently adding 21 MW of wind generation



## Western Farmers Electric Co-op, OK

- Power purchaser
- Capacity: 74.25 MW
- Online 2003



## Basin Electric, SD

- Power purchaser
- Capacity: 40 MW
- 2002 Wind Co-op of the Year.



## WPA/Utility Partnerships

- PMA Green Tags
- Transmission Analysis
- Public Power Workshops
- Co-op Outreach
- Green Pricing Support
- Wind Energy Finance Tool
- Wind-Hydro Analysis